Remarks

Claims 1-5 and 10-15 are now pending in this application. Applicants have amended claims 1-5 to clarify the claimed invention. Claims 10-12 are withdrawn from further consideration by the Examiner as being directed to non-elected inventions. Applicants respectfully request favorable reconsideration of this case.

The Examiner rejected claims 1-5 and 13-15 under 35 U.S.C. § 112, second paragraph as indefinite. Claim 1 no longer recites "the actual welding station". Additionally, claim 13, line 3, recites a "calculation" unit, while claim 13, line 2, recites a "calibration" unit. Therefore, antecedent basis exists for all terming in claim 13. Applicants submit that all claims comply with 35 U.S.C. § 112, second paragraph, and respectfully request withdrawal of this rejection.

The Examiner rejected claims 1, 2, 4, and 15 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent publication 2003/0052108 to Rappl et al. in view of U.S. patent 4,716,273 to Paton. The Examiner rejected claims 5, 13 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Rappl et al. in view of U.S. patent 4,594,498 to Ueguri et al.

The combination of Rappl et al. and Paton does not suggest the invention recited in claim 1 since, among other things, the combination does not suggest a simulation model or calibrating a simulation model. Rather, Rappl et al. discloses a calibration method for calibrating a power supply and a robot. According to Rappl et al., predetermined parameter set values are compared with actual values received from a command signal. Compensation curves are calculated in

order to correct an error in the command signal.

On the other hand, the invention recited in claim 1 includes providing a simulation model and calibrating the simulation model by measuring system input parameter values, feeding the system input parameter values into the simulation mode and calculating tuning parameter values. Calculating compensation curves as disclosed by Rappl et al. is not the same as calculating tuning parameters as recited in claim 1. Additionally, the curve fitting method and look-up table suggested Rappl et al. do not disclose a simulation model.

On the other hand, Paton et al. only suggests a welding trainer. As described at col. 11, line 55, through col. 12, line 12, the trainer suggested by Paton et al. is a welding simulation machine using hardware bodies and mechanical elements to produce analog/digital control over welding conditions where pulsed electric discharges are physically generated by applying a low current from a real power source to a real electrode upon a plate with a gap between the electrode and the plate. Additionally, as described at col. 15, lines 28-64, various noise signals translating the welding conditions are supplied to earphones of a helmet on the welder's head, thus indicating whether the welder maintains an error-free welding process on the machine. On the other hand, the claimed invention includes a simulation model including system input parameters that are characteristic of an arc welding system. This is well beyond the scope of Paton et al. and not remotely suggested by Paton et al.

Clearly, Paton et al. does not suggest a simulation model including system input parameters that are characteristic of an arc welding system as recited in independent claim 1. Paton et al. suggests setting up a welding trainer. A purpose of a trainer is to present feedback to

a trainee. On the other hand, the claimed invention relates to a welding system for real production processes, which require much more exacting results than a trainer.

In view of the above, the combination of Rappl et al. and Paton et al. does not suggest the invention recited in claims 1, 2, 4, and 15. Therefore, the invention recited in claims 1, 2, 4, and 15 is not obvious in view of the combination of Rappl et al. and Paton et al. Accordingly, Applicants respectfully request withdrawal of this rejection.

The combination of Rappl and Ueguri et al. does not suggest the invention recited in claims 5, 13, and 14 since, among other things, the combination does not suggest a simulation model or calibrating a simulation model. Along these lines, the Examiner cites Ueguri et al. as suggesting models of metal transport. However, Ueguri et al. appear to suggest actual states of drops of molten metal rather than a simulation model of an arc welding system. There is nothing in col. 1, lines 11-18, nor col. 9, line 41, through col. 10, line 6, of Ueguri et al. that suggests in any way simulation model of an arc welding system.

Therefore, the combination of Rappl and Ueguri et al. does not suggest the invention recited in claims 5, 13, and 14. Accordingly, the invention recited in claims 5, 13, and 14 is not obvious in view of the combination of Rappl and Ueguri et al. Consequently, Applicants respectfully request withdrawal of this rejection.

In view of the above, the references relied upon in the office action, whether considered alone or in combination, do not disclose or suggest patentable features of the claimed invention.

Therefore, the references relied upon in the office action, whether considered alone or in combination, do not anticipate the claimed invention or make the claimed invention obvious. Accordingly, Applicants request withdrawal of the rejections based upon the cited references.

In conclusion, Applicants respectfully request favorable reconsideration of this case and early issuance of the Notice of Allowance.

If an interview would advance the prosecution of this application, Applicants respectfully urge the Examiner to contact the undersigned at the telephone number listed below.

The undersigned authorizes the Commissioner to charge fee insufficiency and credit overpayment associated with this communication to Deposit Account No. 22-0261.

Respectfully submitted,

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